UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ALABAMA SOUTHERN DIVISION

KARL STORZ ENDOSCOPY-	}
AMERICA, INC.,	}
Plaintiff,	} }
v.	} Case No.: 2:12-CV-02716-RDP
STERIS INSTRUMENT	}
MANAGEMENT SERVICES, INC.,	}
	}
Defendant.	}

MEMORANDUM OPINION

This patent infringement case is before the court on six motions: Plaintiff's Motion for Partial Summary Judgment as to certain infringement claims and patent validity (Doc. # 172); Defendant's Motion for Summary Judgment based on the affirmative defense of repair (Doc. # 174); the parties' *Daubert* motions to exclude expert witness testimony at trial (Docs. # 173, 175); and Plaintiff's Motion for Sanctions based on alleged spoliation of evidence (Doc. # 171). The Motions have been fully briefed (Docs. # 176, 177, 178, 179, 180, 190, 191, 192, 196, 197, 202-1, 202-2, 212, 213, 214) and are under submission. After careful review, and for the reasons discussed below, Defendant's Motion for Summary Judgment (Doc. # 174) is due to be granted and all other Motions (Docs. # 171, 172, 173, 175, 210) are due to be denied.

I. Background¹

This case concerns endoscopes. An endoscope is a tubular device used by medical professionals to see inside body cavities. (Doc. # 104 at 2). Endoscopes have various components. The outermost body of a rigid endoscope is an inflexible tubular shaft. (Doc. # 169-1 at 1, ¶ 1). The shaft houses an inner tube called the optical relay assembly. (*Id.* at 1, ¶¶ 1-2). The optical relay assembly is a series of lenses and spacers arranged in a specific order. (*Id.* at 1, ¶ 2). The purpose of the optical relay assembly is to pass the image from one end of the endoscope to the other. (*Id.*). The user can look through an eyepiece attached to the proximal end of the endoscope to see the image from the distal end. (*Id.* at 1-2, ¶¶ 1, 6).

Plaintiff Karl Storz Endoscopy-America, Inc. ("KSEA") manufactures and services endoscopes. It owns two patents at issue in this case: U.S. Patent No. 7,530,945, entitled "Endoscope and Method for Assembling Components of an Optical System" ("the '945 Patent"), and U.S. Reissued Patent No. RE46,044, also entitled "Endoscope and Method for Assembling Components of an Optical System" ("the '044 Patent"). (Docs. # 93-1, 93-2). The '945 Patent is a method patent covering a process of assembling endoscopes and the '044 Patent is a machine patent covering the endoscopes themselves. (*See id.*). The patents are substantially similar; that is, they cover the same devices and the method of assembling those devices. (*See id.*). Through the patents, KSEA claims right to the process of creating an endoscope with an interior tube (the optical relay assembly), which is encased in transparent shrinkable material that encloses and fixes

¹ The facts set out in this opinion are gleaned from the parties' submissions and the court's own examination of the evidentiary record. All reasonable doubts about the facts have been resolved in favor of the nonmoving party. *See Info. Sys. & Networks Corp. v. City of Atlanta*, 281 F.3d 1220, 1224 (11th Cir. 2002). These are the "facts" for summary judgment purposes only. They may not be the actual facts that could be established through live testimony at trial. *See Cox v. Adm'r U.S. Steel & Carnegie Pension Fund*, 17 F.3d 1386, 1400 (11th Cir. 1994).

the optical components (lenses and spacers) and allows for a visual check of the alignment of the optical components before assembly of the entire endoscope. (Docs. # 93-1 at 7; 93-2 at 7).

Without the claimed invention, the quality check of the optical relay assembly in an endoscope is normally performed after the endoscope is completely assembled. (*Id.*). "If optical errors are found, it is then very expensive to correct these, and in most cases the endoscope has to be completely dismantled." (*Id.*). The invention solves this issue because "it is now possible to produce [an optical relay assembly] outside the endoscope and to check this unit visually" through the transparent shrinkable material. (*Id.*).

The '945 Patent has seven claim limitations. (Doc. #93-1 at 9). Claim 1 is representative of the claimed method:

- 1. A method for assembling an endoscope having a tubular shaft, an optical system having several components, said components of said optical system are contained in an interior of said tubular shaft, said components of said optical systems are at least partially surrounded by a tube made of both a transparent² and a shrunk material, said method comprising the following steps
 - a) introducing said components into a tube of transparent and shrinkable material to form a unit,
 - b) shrinking said shrinkable material of said tube for fixing the position of said components contained within said tube relative to one another,
 - c) checking a position of said components relative to one another through said transparent shrunk material, of said shrunk tube and
 - d) introducing said unit comprised of said shrunk tube and said components contained therein into said tubular shaft.

(Id.).

² Pursuant to *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), Judge Bowdre, who previously was assigned this case, construed "transparent," as the term is used in the patents, to mean "allowing the transmission of light such that the assembler of an endoscope can visually check the alignment of the component parts of the endoscope." (Doc. # 112 at 2). Judge Bowdre declined to construe any other disputed terms, finding that no other terms required construction. (*Id.* at 3).

The '044 Patent has 32 claim limitations. (Doc. # 93-2 at 9-11). Claim 1 is representative of the claimed device:

1. An endoscope, comprising:

A tubular shaft, having an inside face,

An optical system having several components, said components of said optical system are contained in an interior of said tubular shaft,

said components comprising at least two of the following: a lens, a spacer, a diaphragm, a prism and a filter, said components directly surrounded by a support piece made of a shrunk material, wherein

said shrunk material is a transparent material,

said support piece made of said transparent material has a shape of a tube, and

said tube containing said components of said optical system has been shrunk prior to inserting said tube into said interior of said tubular shaft, for allowing a visual check of a position of said components relative to one another, and

a gap located between an outside surface of said tube of shrunk material and said inside face of said tubular shaft.

(*Id.* at 9). Claims 8, 15, and 23 describe substantially similar endoscopes. (*Id.* at 10). Claims 2, 9, 16, and 24 limit the claimed endoscopes to those with optical components enclosed by transparent material. (*Id.*).

In simpler terms, KSEA rigid endoscopes have a unique "tube within a tube" construction. The outer tube is the rigid body of the endoscope. The inner tube is enclosed with a transparent and shrinkable material, which the parties sometimes refer to as "shrink wrap." The inner tube contains lenses of different diameters and prescriptions separated by spacers of different sizes. So, in the most general sense, the inner tube is a shrink-wrapped row of lenses and spacers. This inner tube can be assembled and inspected separately from the rest of the endoscope and can be removed from the endoscope as one unit. Again, the inner tube is the optical relay assembly.

Defendant STERIS Instrument Management Service, Inc. ("IMS") repairs³ endoscopes. IMS is KSEA's primary competitor in servicing rigid endoscopes. (Doc. # 169-1 at 2, ¶ 7). A common repair that IMS makes related to KSEA rigid endoscopes is to fix a broken rod lens caused by an operator torquing the endoscope during surgical procedures or some other misuse. (*Id.* at 3, ¶¶ 12-13). Generally speaking, when called upon to repair an endoscope with a damaged rod lens or an optical relay that is not functioning properly for any reason, IMS will replace the optical relay. (*Id.* at 3-4, ¶¶ 15, 24). More specifically, the parties stipulated to the following facts regarding IMS's repair process:

- 1. When IMS receives a rigid endoscope for repair, a technician first evaluates the endoscope to determine the extent of repairs necessary. (*Id.* at $3, \P 9$).
- 2. If this evaluation reveals that the endoscope is not providing an acceptable optical image, then the technician will remove and inspect the optical relay. (*Id.* at 3, \P 15).
- 3. To access the optical relay, "the technician opens the endoscope by heating the adhesive sealing the eyepiece utilizing the flame from a HydroFlux Welder, placing the endoscope in a jig, breaking the seal with a specialized tool, and then removing the eyepiece and the screws that hold the ocular base in place." (Id. at 4, ¶ 16).
- 4. The technician slides the optical relay out of the tubular shaft and cuts open the shrink wrap. (*Id.* at 4, $\P\P$ 17-18).
- 5. The technician discards any damaged lenses and spacers and places any reusable lenses and spacers in inventory. (*Id.* at 4, \P 20-21).

³ At this point, the court uses the word "repair" in the common language sense, not (at least yet) in any technical or legal sense.

- 6. The technician slides a replacement optical relay -- assembled by a separate IMS sub-assembly department (more on that below) -- into the tubular shaft. (*Id.* at 4-5, ¶¶ 24-25).
- 7. The technician "assembles the eyepiece and ocular base over the optical relay" and "performs optical alignments." (*Id.* at 5, ¶¶ 25-26).
- 8. "The endoscope and eyepiece are then placed in an oven to remove any moisture." (*Id.* at 5, \P 27).
- 9. Finally, the technician seals the endoscope by "appl[ying] glue over the threads of the endoscope and secures the eyepiece to the threads." (*Id.* at 5, \P 28).

The parties also stipulated about how a technician in the IMS sub-assembly department assembles replacement optical relays for KSEA rigid endoscopes:

- 1. The technician lines up a sequence of lenses and spacers in "a tray with a V-shaped notch to hold the components in place." (*Id.* at 5, ¶ 32).
- 2. The technician slides and pulls the line of components through a loading tube that covers the components in shrink wrap. (*Id.*).
- 3. The technician heats the sub-assembly to seal the shrink wrap and cuts off any excess. (*Id.* at 5, \P 33).

The lenses and spacers that an IMS technician uses to assemble a replacement optical relay are either new or recycled from previously repaired KSEA endoscopes. (*Id.* at 5, \P 30). "Typically, about two to four [recycled] rod lenses are used per endoscope, though a repaired endoscope may have all replacement lenses." (*Id.* at 5, \P 31). But, IMS does not track the number of recycled lenses used in each endoscope. (*Id.*). Nor does KSEA sell component parts like rod lenses and spacers. (*See* Docs. # 166-8 at 40, \P 85; 197 at 26).

Endoscopes repaired by IMS do not meet KSEA's original manufacturing specifications, primarily because IMS uses different lenses. (Doc. # 166-8 at 174-75, ¶¶ 345-46). The rod lenses in KSEA rigid endoscopes are dog-bone shaped, which, according to KSEA's expert on medical imaging devices, Albert Juergens, "allow a higher degree of flex in the endoscope shaft without breaking the lens." (*Id.* at 35, ¶ 77). But, IMS assembles replacement optical relays with both dogbone and cylindrical lenses. (*Id.* at 174, ¶ 345). Mixing and matching the two types of lenses can negatively affect image quality. (*Id.*). Cylindrical lenses break easier than dog-bone lenses. (*Id.* at 35, ¶ 77). So, a user who sends a KSEA endoscope to IMS "would therefore get back an endoscope significantly more delicate than the one [KSEA] initially sold them." (*Id.* at 35, ¶ 77). And, whether because of the lenses used or some other reason, at least one IMS endoscope was discovered to have a limited field of view. (*Id.* at 174, 177, ¶¶ 344, 349).

IMS does not seal the endoscopes according to KSEA's specifications. KSEA's rigid endoscopes are not designed to be opened as doing so may allow moisture to enter the shaft. (Docs. # 166-30 at 50-52; 186-2 at 16). Keeping the rigid endoscope closed also serves to withstand autoclaving. (*Id.*). Indeed, KSEA seals its rigid endoscopes with epoxies and welds that have been validated by the FDA. (Doc. # 186-2 at 16). Apparently, IMS does not do use that technique because the director of KSEA's scope inspections at hospitals has seen KSEA endoscopes repaired by third-parties with pitted, flaking, and discolored seals. (*Id.* at 12). To be sure, Juergens stated in his export report that IMS "acknowledges that it does not meet KSEA's standards even though it advertises its endoscopes as 'Certified Pre-Owned.'" (Doc. # 166-8 at 175, ¶ 346). The record contains evidence of an IMS endoscope with rusting, pitting, and cracking at the laser weld within

⁴ The entire summary judgment record is more expansive than the court's preceding recitation of the facts may suggest. But the facts presented are all the summary judgment facts relevant to IMS's Motion for Summary Judgment, and, because the Motion is due to be granted, the remaining Motions relying on other parts of the summary judgment record are due to be denied.

two weeks of use, an IMS endoscope eight centimeters longer than a KSEA endoscope, and an IMS "welding jig that may produce scope shafts slightly longer than specification." (*Id.*).

In its Second Amended Complaint, KSEA alleged two instances of patent infringement. It contends that IMS infringes both the '945 Patent and the '044 Patent. (Doc. # 93 at 8-13). KSEA asserts that IMS produces infringing endoscopes through infringing methods during its repair process by fixing the position of optical components in a tube made out of a transparent shrunk material, checking the position of optical components through the transparent shrunk material, and introducing the shrunk tube into the tubular shaft of the endoscope. (*See id.*). Among other damages, KSEA seeks lost profits from IMS's endoscope repair sales. (*Id.* at 10, 12, ¶¶ 32, 41).

IMS filed counterclaims for declarations that it does not infringe either patent and that both patents are invalid. (Doc. #94 at 13-21). IMS raised as one of its many defenses that its methods involve a permissible repair of the patented endoscopes. (*Id.* at 11, ¶ 52).

II. Summary Judgment Standard

Under Federal Rule of Civil Procedure 56, summary judgment is proper "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). The party asking for summary judgment always bears the initial responsibility of informing the court of the basis for its motion and identifying those portions of the pleadings or filings which it believes demonstrate the absence of a genuine issue of material fact. *Id.* at 323. Once the moving party has met its burden, Rule 56 requires the non-moving party to go beyond the pleadings and -- by pointing to affidavits, or depositions, answers to interrogatories, and/or admissions on file -- designate specific facts showing that there is a genuine issue for trial. *Id.* at 324.

The substantive law will identify which facts are material and which are irrelevant. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). All reasonable doubts about the facts and all justifiable inferences are resolved in favor of the non-movant. *See Allen v. Bd. of Pub. Educ. for Bibb Cty.*, 495 F.3d 1306, 1314 (11th Cir. 2007); *Fitzpatrick v. City of Atlanta*, 2 F.3d 1112, 1115 (11th Cir. 1993). A dispute is genuine "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson*, 477 U.S. at 248. If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted. *See id.* at 249.

When faced with a "properly supported motion for summary judgment, [the nonmoving party] must come forward with specific factual evidence, presenting more than mere allegations." *Gargiulo v. G.M. Sales, Inc.*, 131 F.3d 995, 999 (11th Cir. 1997). "[A] party opposing a properly supported motion for summary judgment 'may not rest upon the mere allegations or denials of his pleading, but . . . must set forth specific facts showing that there is a genuine issue for trial." *Anderson*, 477 U.S. at 248 (citations omitted).

Summary judgment is mandated "against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Celotex Corp.*, 477 U.S. at 322. If the moving party bears the burden of proof at trial, then it can only meet its initial burden on summary judgment by coming forward with positive evidence demonstrating the absence of a genuine issue of material fact: *i.e.*, facts that would entitle it to a directed verdict if not controverted at trial. *See Fitzpatrick*, 2 F.3d at 1115. Once the moving party makes such a showing, the burden shifts to the non-moving party to produce significant, probative evidence demonstrating a genuine issue for trial. *See id*.

"[A]t the summary judgment stage the judge's function is not himself to weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for trial." *Anderson*, 477 U.S. at 249. "Essentially, the inquiry is 'whether the evidence presents a sufficient disagreement to require submission to the jury or whether it is so one-sided that one party must prevail as a matter of law." *Sawyer v. Sw. Airlines Co.*, 243 F. Supp. 2d 1257, 1262 (D. Kan. 2003) (quoting *Anderson*, 477 U.S. at 251-52); *see also LaRoche v. Denny's, Inc.*, 62 F. Supp. 2d 1366, 1371 (S.D. Fla. 1999) ("The law is clear . . . that suspicion, perception, opinion, and belief cannot be used to defeat a motion for summary judgment.").

The Eleventh Circuit has interpreted *Celotex* to require that, as to issues on which the nonmovant would bear the burden of proof at trial:

[a] moving party is not required to support its motion with affidavits or other similar material negating the opponent's claim in order to discharge this initial responsibility. Instead, the moving party simply may show []—that is, point[] out to the district court—that there is an absence of evidence to support the non-moving party's case. Alternatively, the moving party may support its motion for summary judgment with affirmative evidence demonstrating that the non-moving party will be unable to prove its case at trial.

Fitzpatrick, 2 F.3d at 1115 (quoting U.S. v. Four Parcels of Real Property, 941 F.2d 1428, 1437 (11th Cir. 1991)). And, where the moving party has met this initial burden by showing that there is an absence of evidence supporting the nonmoving party's case, the nonmoving party must

respond in one of two ways. First, he or she may show that the record in fact contains supporting evidence, sufficient to withstand a directed verdict motion, which was "overlooked or ignored" by the moving party, who has thus failed to meet the initial burden of showing an absence of evidence. Second, he or she may come forward with additional evidence sufficient to withstand a directed verdict motion at trial based on the alleged evidentiary deficiency.

Id. (internal citations omitted).

If the moving party bears the burden of proof at trial, then it can only meet its initial burden on summary judgment by coming forward with positive evidence demonstrating the absence of a genuine issue of material fact; *i.e.* facts that would entitle it to a directed verdict if not controverted at trial. *See Fitzpatrick*, 2 F.3d at 1115. Once the moving party makes such a showing, the burden shifts to the non-moving party to produce significant, probative evidence demonstrating a genuine issue for trial.

III. Analysis

IMS argues that it is entitled to summary judgment on KSEA's two claims of patent infringement pursuant to the affirmative defense of repair. (*See* Doc. # 174). IMS contends that it does not utilize infringing methods to reconstruct infringing devices. Rather, according to IMS, as a matter of law, it permissibly repairs KSEA endoscopes as a matter of law. IMS asserts that KSEA exhausted its patent rights in any endoscopes sold and that IMS consequently has the right to repair the endoscopes. For the reasons explained below, the court concludes that (1) the undisputed evidence in the Rule 56 record would entitle IMS to a directed verdict at trial based on the repair defense, and (2) KSEA has failed to show there is a genuine issue of material fact for a jury to decide as to that defense. Therefore, IMS's Motion for Summary Judgment is due to be granted.

A. The Extent of Patent Rights

A patent grants to the patentee "the right to exclude others from making, using, offering for sale, or selling the [patented] invention." 35 U.S.C. § 154(a)(1). Patent infringement therefore occurs when a party "without authority makes, uses, offers to sell, or sells any patented invention . . . during the term of the patent." 35 U.S.C. § 271(a).

But, a patentee's right to exclude is not unlimited. "For over 160 years, the doctrine of patent exhaustion has imposed a limit on that right to exclude." *Impression Prod., Inc. v. Lexmark Int'l, Inc.*, 137 S. Ct. 1523, 1531 (2017). The doctrine of patent exhaustion "provides that the initial authorized sale of a patented item terminates all patent rights to that item." *Quanta Computer, Inc.*

v. LG Elecs., Inc., 553 U.S. 617, 625 (2008). This is so because "[t]he Patent Act promotes the progress of science and the useful arts by granting to inventors a limited monopoly that allows them to secure the financial rewards for their inventions. . . . But once a patentee sells an item, it has enjoyed all the rights secured by that limited monopoly." Impression Prod., 137 S. Ct. at 1531-32 (quotation and alteration marks omitted). Accordingly, "[w]hen a patentee chooses to sell an item, that product is no longer within the limits of the monopoly and instead becomes the private, individual property of the purchaser, with the rights and benefits that come along with ownership." Id. at 1531 (quotation omitted).

B. The Right to Repair

A purchaser's right to repair is one of the rights under the doctrine of patent exhaustion that limits the patentee's rights to exclude. *Id.* at 1532. The purchaser of a patented article has "the right to preserve the useful life of the original article," *Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1102 (Fed. Cir. 2001), and the right "to enable it to function properly," *Bottom Line Mgmt.*, *Inc. v. Pan Man*, *Inc.*, 228 F.3d 1352, 1354 (Fed. Cir. 2000). Simply stated, making a "repair" is permissible, but undertaking a "reconstruction" is not. *Jazz Photo*, 264 F.3d at 1102. Impermissible "reconstruction" of a patented device is "reconstruction of the entity as to in fact make a new article, . . . after the entity, viewed as a whole, has become spent." *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 346 (1961) (quotation and citation omitted).

Repair is an affirmative defense to a patent infringement claim. *Jazz Photo*, 264 F.3d at 1101. So, a defendant raising the repair defense has the burden of proof at trial of establishing that its activities constitute permissible repair and not impermissible reconstruction. *See id.* at 1102 ("The burden of establishing an affirmative defense is on the party raising the defense. The Commission correctly held that the respondents had the burden of establishing this defense by a

preponderance of the evidence, including the burden of coming forward with evidence to show that the activities performed in processing the used cameras constituted permissible repair.").

The distinction between what constitutes permissible repair as opposed to impermissible reconstruction is a judicially created and in some instances may be a fact intensive inquiry. See Aktiebolag v. E.J. Co., 121 F.3d 669, 674 (Fed. Cir. 1997) ("[T]here is no bright-line test for determining whether reconstruction or repair has occurred."). The seminal Supreme Court case on repair versus reconstruction is Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336 (1961). In Aro, the patent at issue covered a combination of a fabric convertible top and associated metal support structure for an automobile. The fabric itself was an unpatented component of the larger patented system. The patentee alleged that the petitioner infringed the patent by selling replacement fabrics designed to fit within the patented system. The Supreme Court disagreed, finding that "the replacement of the fabric involved in this case must be characterized as permissible 'repair,' not 'reconstruction,'" because "[m]ere replacement of individual unpatented parts, one at a time, whether of the same part repeatedly or different parts successively, is no more than the lawful right of the owner to repair his property." Aro, 365 U.S. at 346. An impermissible "reconstruction," on the other hand, is "such a true reconstruction of the entity as to in fact make a new article, . . . after the entity, viewed as a whole, has become spent." *Id.* (quotation and citation omitted).

Three years following its *Aro* opinion, the Supreme Court decided *Wilbur-Ellis Co. v. Kuther*, 377 U.S. 422 (1964). In *Wilbur-Ellis*, the alleged infringers resized six of the 35 elements of patented fish-canning machines so that the machines could pack fish into five-ounce instead of one-pound cans, as the machines were originally constructed to do. The Supreme Court found permissible repair, not impermissible reconstruction, because (1) the fish-canning machines "were

not spent; they had years of usefulness remaining though they needed cleaning and repair"; (2) "the size of cans serviced by the machine was no part of the invention; nor were characteristics of size, location, shape and construction of the six elements in question patented"; and (3) although the alleged infringers "were doing more than repair in the customary sense[,] . . . what they did was kin to repair for it bore on the useful capacity of the old [patented] combination." *Wilbur-Ellis*, 377 U.S. at 424-25.

There is also Federal Circuit precedent in this area. In General Electric Co. v. United States, 572 F.2d 745 (Ct. Cl. 1978), the U.S. Navy replaced patented gun mounts on its vessels by, among other things, disassembling the gun mounts into their smallest component parts and reassembling the gun mounts with either new components or reused components from other disassembled gun mounts. The Navy did not track whether any components from a specific disassembled gun mount were used in the reassembled version of the same gun mount, so some reassembled gun mounts did not contain any of their original components. The Court of Claims found that completely disassembling the gun mounts and reassembling them with mixed-and-matched used and new parts was permissible repair. Gen. Elec., 572 F.2d at 786. The reassembled gun mounts were not new articles "even though the gun mounts were disassembled in order to be overhauled, and even though, in some or most or all instances, the reassembled elements were not returned to the same gun mount or the same ship." Id. at 784. Like the fish-canning machines in Wilbur-Ellis, the gun mounts were not "spent" because they had years of usefulness remaining despite the need for maintenance. Id. at 785. The Court of Claims concluded that overhauling the gun mounts was perhaps even more convincingly a permissible repair than refurbishing the fish-canning machines in Wilbur-Ellis because the Navy used only the patentee's components in reassembling the gun mounts and did not adapt the gun mounts to different uses. Id. at 785-86. And, as the Court of Claims also reasoned, "[i]f it is permissible, as it is, to introduce wholly new components, acquired from another supplier, into the renovation of a device embodying a patented combination, . . . it is very hard to say that [the Navy's activities] amounted to reconstruction when . . . the Navy worked with, substantially, all [patentee]-supplied elements and did not introduce new elements acquired from others than [the patentee]." *Id.* at 786 (citations omitted).

Similarly, in *Dana Corp. v. Am. Precision Co.*, 827 F.2d 755 (Fed. Cir. 1987), the alleged infringers rebuilt patented truck clutches by disassembling the clutches into their component parts, replacing worn or defective parts with either new or salvaged parts, and reassembling the clutches. The alleged infringers maintained an inventory of salvaged components from disassemblies that could be reused in later assemblies. If they ran out of salvaged inventory, they simply ordered new parts. The Federal Circuit decided that this process was a permissible repair. *Dana*, 827 F.2d at 760. In doing so, it determined that the patentee contemplated repair of the patented trucks' clutches and that the complete disassembly of the clutches was not "voluntary destruction of the patented clutch" followed by a "second creation." *Id.* at 759-60.

In *Jazz Photo*, the Federal Circuit sanctioned the following process as a permissible repair of a patented disposable film camera: removing the cardboard cover encasing the camera; opening the plastic camera body, usually by cutting at least one weld; replacing the winding wheel or modifying the film cartridge; resetting the film counter; replacing the battery in flash cameras; winding new film out of a canister onto a spool or into a roll; resealing the plastic body with tape or glue; and applying a new cardboard cover. *Jazz Photo*, 264 F.3d at 1101, 1105. This process made the camera reusable even though the patentee intended for the camera to be discarded after using up one film roll. Still, it was deemed a permissible repair because "the patentee's unilateral intent, without more, does not bar reuse of the patented article, or convert repair into

reconstruction." *Id.* at 1106. The Federal Circuit did not consider "inserting new film and film container, resetting the film counter, and resealing the broken case" a "second creation" of the patented article. *Id.*

The Jazz Photo court called the "right to preserve its fitness for use" the "common thread in precedent" for what constitutes permissible repair of a patented article. 264 F.3d at 1106 (quotation omitted). Determining whether a party preserves an article's fitness for use requires "consideration of the remaining useful capacity of the article, and the nature and role of the replaced parts in achieving that useful capacity." Id. By breaking open the camera and replacing the film, the alleged infringers in Jazz Photo extended the useful life of the camera, and the refurbished cameras otherwise remained as originally sold. Id. at 1107. Therefore, the cameras were repaired – not reconstructed. Id.

On the other end of the spectrum, "'Reconstruction'... requires a more extensive rebuilding of the patented entity than is exemplified in *Aro Manufacturing*, *Wilbur-Ellis*, *General Electric*, and *Dana Corp*." *Id.* at 1104. For example, in *Aktiebolag v. E.J. Co.*, 121 F.3d 669, 670 (Fed. Cir. 1997), the patented invention was a drill formed by a shank and a unique tip geometry. The drill tip required occasional resharpening as it became dulled with use over time. *Aktiebolag*, 121 F.3d at 671. But the defendant, a third-party drill repair service, went beyond just merely resharpening the drill tip. *Id.* It also offered "retipping" services, through which it removed the worn tip from the drill shank, brazed a rectangular piece of new carbide onto the drill shank, and then carved the carbide into the unique tip geometry from the patented drill. In other words, the defendant reconstructed (*i.e.*, recreated) the drill tip. *Id.* at 671-72.

In finding that the retipping service was impermissible reconstruction, the Federal Circuit first reviewed the Supreme Court's "expansive view of what constitutes a permissible repair"

established in *Aro*. *Id*. at 672. Under *Aro*, even if the retipping service "cost almost as much as the drill or if the replacement of the tip is difficult and time consuming, as in this case, these factors are not dispositive of reconstruction." *Id*. Also under *Aro*, "the fact that [the alleged infringer] may be replacing the novel features of the . . . patented invention is also not dispositive of reconstruction." *Id*. at 673.

The Federal Circuit identified several factors a court should consider in determining whether a defendant made a new article: "the nature of the actions by the defendant"; "the nature of the device and how it is designed (namely, whether one of the components of the patented combination has a shorter useful life than the whole)"; "whether a market has developed to manufacture or service the part at issue"; and "objective evidence of the intent of the patentee." *Id.* at 672. Guided generally by those factors, the Federal Circuit found that the drill is "spent" when the tip can no longer be resharpened and must be retipped. *Id.* Because the defendant's actions were "effectively a re-creation," the nature of defendant's work was not repair. *Id.* The drill did not have a "useful life much longer than that of certain parts which wear out quickly" because the drill tip was not manufactured to be a replaceable part, the drill tip was not expected to have a useful life different than that of the drill shank, and the drill tip was not easily detachable from the drill shank. *Id.* at 673-74. Considering also that the patentee never intended for its drills to be retipped and that no substantial market for drill retipping existed, the Federal Circuit found that the defendant "reconstruct[ed] an otherwise spent device." *Id.* at 674.

Similarly, in *Lummus Indus., Inc. v. D.M. & E. Corp.*, 862 F.2d 267, 269 (Fed. Cir. 1988), the patent claims covered an apparatus for cutting textile fiber bundles that utilized an assembly of reels. In *Lummus*, the defendants manufactured and sold cutter reels that were usable only in the patented device. A jury returned a verdict of infringement. Part of the instruction the district

court gave the jury stated: "the replacement of a component which is not worn out with an accessory component which is a material part of the invention constitutes patent infringement, because it is reconstruction of the patented machine." *Lummus*, 862 F.2d at 270. The Federal Circuit found this portion of the instruction to be a correct statement of law. *Id*.

The district court also instructed the jury on the parties' respective positions: "the plaintiff contends . . . that [the cutter reel] is the heart of the invention and that to make the reel, manufacture it and to sell it new violates the very heart of the patent. The defendants say and contend that it's repair, that they bought the overall machine, and that this is only a part and that to make [it] new and to replace it is nothing more than repair." *Lummus*, 862 F.2d at 271. The Federal Circuit rejected the defendants' argument that that instruction "misinformed the jury that manufacture and sale of the reel cannot be 'repair' if the component is a sufficiently important element of the combination" because *Aro* "eschewed the suggestion that the legal distinction between 'reconstruction' and 'repair' should be affected by whether the element of the combination that has been replaced is an 'essential' or 'distinguishing' part of the invention." *Id.* (quoting *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 217 (1980)). So, the Federal Circuit affirmed the jury verdict of infringement. *Id.* at 273.

Finally, in *Husky Injection Molding Sys. Ltd. v. R & D Tool Eng'g Co.*, the Federal Circuit provided an obvious, yet still helpful, example of impermissible reconstruction: "if a patent is obtained on an automobile, the replacement of the spark plugs would constitute permissible repair, but few would argue that the retention of the spark plugs and the replacement of the remainder of the car at a single stroke was permissible activity akin to repair." 291 F.3d 780, 786 (Fed. Cir. 2002).

C. Analysis of IMS's Affirmative Defense

Here, the Rule 56 evidence, examined in the light most favorable to KSEA and assessed in view of the relevant case law, makes clear that IMS repairs rather than reconstructs KSEA's endoscopes. To recap, the parties stipulated that an IMS technician does the following to replace an optical relay: breaks the adhesive sealing the eyepiece to the endoscope; slides the optical relay out of the endoscope; cuts open the shrink wrap enclosing the optical relay; places any undamaged lenses and spacers into inventory for reuse and discards the rest; inserts a replacement optical relay that a technician from a different department assembles by shrink wrapping a series of new or recycled lenses and spacers; and reseals the eyepiece to the endoscope with glue. (Doc. # 169-1 at 4-5, ¶¶ 16-21, 24-33). The end result is an endoscope comprised of all of the same materials except for a different adhesive seal between the eyepiece and the endoscope formed by glue over threads, a different shrink wrap enclosing the optical relay, and different lenses and spacers in the optical relay. The endoscope remains as originally sold in all other respects. All of the individual components that are replaced are unpatented. The lenses and spacers are removable as one unit by design, making it much easier for an IMS technician to replace those components. And, replacing the optical relay can keep the endoscope functioning over its expected 25-year or longer lifespan. (See Doc. # 169-1 at 2, ¶ 8). IMS does not in any manner make a "second creation" of an endoscope. See Jazz Photo, 264 F.3d at 1106. Rather, IMS replaces individual unpatented parts to preserve the useful life of the endoscope, and this process fits comfortably within the right to repair.

When an optical relay fails to pass a clear image because, for example, a rod lens has cracked, the endoscope, "*viewed as a whole*," is not "spent" as that term is used in Supreme Court parlance. *See Aro*, 365 U.S. at 346 (emphasis added). Instead, the endoscope can function properly

again with a replacement optical relay. So, when IMS replaces the optical relay, it "preserve[s] [the endoscope's] fitness for use," which is the "common thread in precedent" for what constitutes permissible repair. *See Jazz Photo*, 264 F.3d at 1106.

For the most part, IMS's activities are similar to the activities found to be permissible repair in *Jazz Photo*. Here and in *Jazz Photo*, the alleged infringers break a permanent seal on a patented device's outer body to replace internal components. But IMS's activities are even less akin to reconstruction than those in *Jazz Photo*. That is so because, unlike the repairers in *Jazz Photo*, IMS does not repurpose the patented device. The repairs in *Jazz Photo* modified a single-use camera into a reusable camera, whereas here the endoscope's functionality remains precisely the same after IMS's repair. *See also Wilbur-Ellis*, 377 U.S. at 424-25 (determining that repurposing a patented machine was permissible repair). Again, this shows that IMS is only exercising its right to preserve the endoscope's useful life.

Likewise, IMS's activities are similar to (and, indeed, even less substantial) than the activities found to be permissible repair in *Gen. Elec*. There, some of the reassembled gun mounts contained none of their original components. 572 F.3d at 786. But here, an endoscope with an optical relay replaced by IMS contains all of its original parts except for adhesive, shrink wrap, lenses, and spacers. This demonstrates repair, not reconstruction.

This case is distinguishable from *Aktiebolag*. There, the patented drill was spent as a whole when the drill tip was no longer operable and could not be resharpened. At that point, the drill could not drill. And, the only way to enable the drill to function properly was to reform the drill tip from a piece of carbide brazed on the drill shank. This was "effectively a re-creation." *Aktiebolag*, 121 F.3d at 673. But here, an endoscope that is otherwise operational but contains a

failed optical relay is not spent as a whole and does not need to be reconstructed or recreated.

Instead, the endoscope can be repaired by replacing unpatented components within it.

KSEA argues that whether IMS's activities constitute a reconstruction is a jury question. In support of its contention, KSEA presents a general assertion and a more contextual argument. First, KSEA asserts that the repair doctrine is a narrow defense that is not appropriate to be decided on summary judgment and that it does not apply to claims for infringement of method patents. (*See* Doc. # 197 at 20-22, 42-43). But, that general assertion is off the target. A repair defense can be decided on summary judgment. *See Aktiebolag v. E.J. Co.*, 121 F.3d 669, 672 (Fed. Cir. 1997) ("We review the district court's grant of summary judgment *de novo* Summary judgment is appropriate where there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. . . . Whether defendant's actions constitute a permissible repair or an infringing reconstruction is a question of law which we also review *de novo*."); *see*, *e.g.*, *Dana Corp. v. Am. Precision Co.*, 827 F.2d 755, 760 (Fed. Cir. 1987) (affirming district court's grant of summary judgment for the defendant based on the repair defense). And, the repair defense applies to method patents. *See Jazz Photo Corp. v. Int'l Trade Comm'n*, 264 F.3d 1094, 1108 (Fed. Cir. 2001) ("The defense of repair is applicable to process claims, [and] to apparatus claims ").

Second, KSEA makes the more specific contention that replacing the entire optical relay is effectively reconstructing a new endoscope. (*See* Doc. # 197 at 7, 22-24). According to KSEA, the "optical relay is what makes the endoscope an endoscope," such that when the optical relay no longer works, the endoscope is "spent" as a whole, and replacing the optical relay therefore effectively reconstructs a new endoscope. (*Id.*). Admittedly, the optical relay is an essential assembly of components that performs the endoscope's primary function of transmitting an optical image from one end of the endoscope to the other. And, without question, the way the optical relay

is assembled is the novel and distinguishing part of the invention. But, as the Supreme Court in *Aro* noted, "whether the element of the combination that has been replaced is an 'essential' or 'distinguishing' part of the invention" does not affect the repair versus reconstruction analysis. *Dawson*, 448 U.S. at 217 (quoting *Aro*, 365 U.S. at 344). Otherwise, one element of the patented combination would be "ascrib[ed] . . . the status of patented invention in itself." *Aro*, 365 U.S. at 344-45. And "replacing the novel features of the . . . patented invention is also not dispositive of reconstruction." *Aktiebolag*, 121 F.3d at 673. So, the importance of the optical relay and its novel features does not dictate a finding that a reconstruction occurs.

To be clear, unlike the convertible-top fabric in *Aro*, the optical relay is not a single unpatented component of a patented combination. Instead, the optical relay itself is comprised of unpatented rod lenses and spacers. And IMS does not simply replace one broken rod lens when it repairs an endoscope by, for example, cutting open the original shrink wrap, replacing one rod lens, and resealing the original shrink wrap. Rather, IMS replaces the entire optical relay with its own shrink-wrapped optical relay.

The optical relay is a series of unpatented rod lenses and spacers held together by unpatented shrink wrap. So, by replacing the entire optical relay, IMS effectively replaces "different parts successively," which it has the right to do. *See Aro*, 365 U.S. at 346. Moreover, replacing and/or refurbishing multiple unpatented components at the same time, like IMS does when it inserts a new optical relay, is permissible repair. *See Wilbur-Ellis*, 377 U.S. at 424-25 (resizing six elements of a patented machine was repair); *Gen. Elec.*, 572 F.2d at 785-86 (reassembling gun mounts with multiple replacement parts was repair); *Dana*, 827 F.2d at 759-60 (reassembling truck clutches with multiple replacement parts was repair).

KSEA's focus on the importance of the optical relay is misplaced, particularly when the Supreme Court's logic in *Aro* is analyzed. To be clear, a party in KSEA's shoes could make this same argument with respect to a single unpatented rod lens. After all, according to KSEA, (1) "without the optical relay [the endoscope] cannot relay the image from inside the cavity, and it is broken (or otherwise spent) as a whole" (Doc. # 197 at 23) and (2) replacing the optical relay reconstructs the endoscope. (*Id.* at 22-24). However, by that logic, a single broken rod lens renders the entire endoscope spent, because then the endoscope could not relay the image, and replacing the single rod lens would reconstruct the endoscope. Of course, replacing one lens is a far cry from reconstructing an endoscope, which helps to explain why the Supreme Court's rationale removes the significance of worn components from the repair doctrine analysis.

Next, KSEA contends that IMS completely deconstructs an endoscope to replace its optical relay; therefore, the argument goes, replacing the optical relay and putting the endoscope back together must be a reconstruction. (Doc. # 197 at 7, 23-24). This is part and parcel to KSEA's assertion that, "[r]econstruction follows when something has been voluntarily broken." (*Id.* at 23) (citing *Am. Cotton-Tie Co. v. Simmons*, 106 U.S. 89, 94 (1882)). However, that is simply not a correct statement of law and the contention is actually at odds with *Cotton-Tie*. The *Cotton-Tie* decision involved patented cotton bale ties consisting of a band for wrapping around a cotton bale and a buckle for fastening the ends of the band together. Users cut and discarded the bale ties to access the cotton. The defendants salvaged those discarded ties and used their components to construct ties that the Supreme Court found to infringe the patents. *Cotton-Tie*, 106 U.S. at 94-95. But, contrary to KSEA's suggestion, the Supreme Court did not find infringement *because* the old ties were cut. Rather, the defendants sold a substantially similar product that just so happened to be made from salvaged components that had been voluntarily broken. *See id*.

Moreover, and again contrary to KSEA's position, deconstructing a patented article to replace its component parts does not demonstrate reconstruction. See Gen. Elec., 572 F.2d at 786 (finding repair when the defendant disassembled and reassembled gun mounts); Dana, 827 F.2d at 760 (finding repair when the defendant disassembled and reassembled truck clutches); Jazz Photo, 264 F.3d at 1101, 1105 (finding repair when the defendant opened a camera casing by breaking at least one weld). Although the method by which a defendant breaks open a patented article is relevant to the "nature of the actions by the defendant" factor, Aktiebolag, 121 F.3d at 673, the standard for determining reconstruction centers on whether a defendant made "such a true reconstruction of the entity as to in fact make a new article . . . after the entity, viewed as a whole, has become spent," Aro, 365 U.S. at 346 (quotation and citation omitted). So, tearing apart a device does not equal reconstruction unless it is followed by the creation of "a new article." Therefore, the fact that IMS breaks permanent bonds on the endoscope to access the optical relay does not create a genuine issue of fact regarding repair versus reconstruction. See Jazz Photo, 264 F.3d at 1101, 1105 (finding a repair occurred even though the alleged infringer cut open a plastic body of a disposable camera by usually cutting at least one weld).

KSEA also argues that IMS reconstructs the endoscopes because, after IMS replaces the optical relay and reseals the bonds, the endoscopes are not built to KSEA's specifications. (*See* Doc. # 197 at 25-28, 28-31).⁵ Evidence in the summary judgment record supports a reasonable inference that IMS endoscopes are inferior to and different from KSEA's originally manufactured endoscopes. Some IMS endoscopes have rod lenses of different diameters and optical prescriptions, produce inferior images, have smaller fields of view, are more fragile, have welds

⁵ KSEA makes similar arguments about IMS endoscopes allegedly violating FDA regulations and posing a danger to the public. (Doc. # 197 at 28, 30-31). Those matters are not relevant to the repair versus reconstruction issue.

prone to deterioration, and can be eight centimeters longer than KSEA's endoscopes. (See Doc. # 166-8 at 35, 174-75, 177, ¶¶ 77, 344-46, 349). But, this evidence does not establish a genuine issue of material fact precluding summary judgment because IMS has the right to modify the endoscopes beyond KSEA's specifications as long as IMS does not in fact make a new article. See Surfco Hawaii v. Fin Control Sys. Pty, Ltd., 264 F.3d 1062, 1066 (Fed. Cir. 2001) ("The right of repair follows from the exhaustion of a patentee's right to control the disposition of a patented article after it has been sold. The owner may use, repair, and modify the device as long as there is not reconstruction of the entity as to in fact make a new article. . . . Although extension of the useful life of an article is the usual reason for modification or replacement of component parts, it is not the only reason allowed by law.") (quotation omitted) (citing Aro, 365 U.S. at 346). Moreover, IMS's use of mixed-and-matched recycled and new lenses and spacers in its optical relays does not demonstrate reconstruction because "it is permissible... to introduce wholly new components, acquired from another supplier, into the renovation of a device embodying a patented combination." Gen. Elec., 572 F.2d at 786. And, a repairer can use both recycled and new parts. See id.; Dana, 827 F.2d at 760.

Finally, KSEA argues that the repair doctrine is limited to the replacement of what KSEA calls "consumable" parts -- parts that are temporary or designed to be replaced -- and that the optical relay is not a consumable part. (Doc. # 197 at 26-28, 34-36). This argument fails for at least two reasons. First, no precedent establishes such a limitation. KSEA claims that *Jazz Photo*, *Gen. Elec.*, and *Dana* involved only "consumable" parts, such that the repair doctrine is limited to the same kind of parts. (*Id.* at 34-36). The disposable camera film roll in *Jazz Photo* was the kind of part that KSEA calls "consumable," but nothing in *Jazz Photo* suggests that the Federal Circuit found permissible repair *because* the film roll was consumable, or that the Federal Circuit would

not have found permissible repair if a more permanent part of the camera is replaced. Moreover, whether the gun mount parts in *General Electric* or truck clutch parts in *Dana* were temporary or designed to be replaced did not matter; rather, what mattered was that the defendants replaced worn parts to extend the useful life of a patented article. Here, IMS replaces worn parts to extend the useful life of the endoscope, and whether the optical relay is "consumable" is inapposite.

Second, KSEA points only to facts that are immaterial to the repair doctrine -- the permanent seals on the endoscope and KSEA's sale conditions -- to show that the optical relay is not "consumable." KSEA contends that, because an optical relay can last indefinitely, KSEA permanently seals its endoscopes and requires purchasers to agree that the whole endoscope must be replaced if it produces a poor image. (Doc. # 197 at 27 (citing Doc. # 186-8 at 11, 31)). But, as explained above, the permanent seals on the endoscope, and IMS breaking them, does not demonstrate reconstruction. *Jazz Photo*, 264 F.3d at 1101, 1105. And, the Supreme Court has expressly rejected the notion that a patentee can preserve any of its patent rights through a post-sale restriction: "[P]atent exhaustion is uniform and automatic. Once a patentee decides to sell . . . that sale exhausts its patent rights, regardless of any post-sale restrictions the patentee purports to impose, either directly or through a license." *Impression Prod*, 137 S. Ct. at 1535.

In summary, because KSEA exhausted its patent rights in any rigid endoscope that it sold, IMS has the right to repair such endoscope by opening the endoscope, removing the optical relay, replacing it with an optical relay assembled by shrink wrapping new and recycled lenses and spacers, and resealing the endoscope. Therefore, there is no genuine dispute of material fact as to IMS's affirmative defense of repair and IMS is entitled to judgment as a matter of law as to the patent infringement claims.

D. The Convoyed Sale Doctrine Is Inapplicable

As a consequence of dismissing the infringement claims, the issue regarding convoyed sales that takes up the remainder of the briefing on IMS's Motion for Summary Judgment becomes inapposite. A "convoyed sale" is the sale of an unpatented product that is sufficiently associated with a patented product. *Am. Seating Co. v. USSC Grp., Inc.*, 514 F.3d 1262, 1268 (Fed. Cir. 2008). If a patented product and an unpatented product "together [are] considered to be components of a single assembly or parts of a complete machine, or they together constituted a functional unit," then the patentee theoretically would have sold both the patented product and the unpatented product had infringement not occurred. *Id.* (quotation omitted). Convoyed sales are thus recoverable as lost profits from a patent infringement claim. *Id.*

Here, KSEA claims that IMS's repairs of KSEA's unpatented flexible endoscopes are convoyed sales recoverable as lost profits from the infringement claims. (*See* Docs. # 93 at 10, 12, ¶¶ 32, 41; 168-2 at 9-12). KSEA's damages expert opined that "it is more likely than not that [KSEA] would have sold the [flexible endoscope repairs] [but for] the infringement" because "rigid and flexible repair sales are typical components of a service contract and/or pricing arrangement with customers, and are used in the same procedures" (Doc. # 168-2 at 10, ¶ 20) (emphasis in original). But, there is no patent infringement in this case so infringement cannot possibly be the but-for cause of convoyed sales. And the loss of flexible endoscope repair sales cannot support any standalone claim because the flexible endoscopes are not patented.

E. Other Pending Motions

Because the court has determined that IMS's Motion for Summary Judgment is due to be granted, the other pending motions are consequently due to be denied as moot. The repair defense defeats all of KSEA's claims against IMS, so there are no remaining claims on which KSEA may

be entitled to partial summary judgment. And, as there is no need for a trial, the parties' respective

Daubert motions are moot. KSEA has moved for the sanction of an adverse inference against IMS

-- that IMS performs the "checking" step of claim 1 of the '945 Patent -- but that inference would

have no bearing on the application of the repair defense. Therefore, that motion is also moot.

IV. Conclusion

For all the foregoing reasons, the court concludes that IMS's Motion for Summary

Judgment (Doc. # 174) is due to be granted. Because final judgment will be entered in favor of

IMS as to the only two claims in this case, KSEA's Motion for Partial Summary Judgment (Doc.

172) is due to be denied. Because the requested sanction has no bearing on IMS's Motion for

Summary Judgment, KSEA's Motion for Sanctions (Doc. # 171) is due to be denied as moot. The

parties' *Daubert* motions (Docs. # 173, 175) are due to be denied as also moot. An Order consistent

with this Memorandum Opinion will be entered.

DONE and **ORDERED** this May 18, 2022.

R. DAVID PROCTOR

UNITED STATES DISTRICT JUDGE

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